

CLAIMS

1. A dye-sensitized photoelectric transfer device comprising:

5 a semiconductor layer containing titania nanotubes; and

 a sensitizing dye retained by the titania nanotubes.

10 2. The dye-sensitized photoelectric transfer device according to claim 1 wherein the sensitizing dye has no acidic substituents.

15 3. The dye-sensitized photoelectric transfer device according to claim 1 wherein the titania nanotubes retain at least two kinds of sensitizing dyes.

 4. The dye-sensitized photoelectric transfer device according to claim 1 or 2 wherein particles of the sensitizing dye do not associate with each other.

20 5. The dye-sensitized photoelectric transfer device according to claim 1 wherein each of the titania nanotubes has a diameter from 5 nm to 80 nm.

 6. The dye-sensitized photoelectric transfer device according to claim 1 wherein the titania nanotubes are in form of an anatase type crystal.

25 7. The dye-sensitized photoelectric transfer device according to claim 1 wherein the semiconductor layer and an electrolyte layer are provided between a

pair of opposed electrodes.

8. The dye-sensitized photoelectric transfer device according to claim 1 wherein the semiconductor layer and an electrolyte layer are provided between a transparent conductive substrate and a conductive substrate as the counter electrode of the transparent conductive substrate to generate electric energy between the transparent conductive substrate and the conductive substrate by photoelectric transfer.

9. The dye-sensitized photoelectric transfer device according to claim 8 wherein the transparent conductive substrate is a transparent substrate having a transparent conductive film.

10. The dye-sensitized photoelectric transfer device according to claim 8 or 9, which is configured as a dye-sensitized solar cell.

11. A method of manufacturing a dye-sensitized photoelectric transfer device, comprising:

using a semiconductor layer containing titania nanotubes; and

having a sensitizing dye retained by the titania nanotubes.